THAT WHICH IS CLAIMED:

1. A method for resolving data collision in a network shared by a plurality of users, the method comprising:

sending a first back-off window to more than one of the plurality of users of the network;

calculating a second back-off window based on at least one operational characteristic of the network; and

sending the second back-off window to more than one of the plurality of users of the network.

2. The method of claim 1, further comprising calculating subsequent back-off windows based on at least one operational characteristic of the network and sending the subsequent back-off windows to more than one of the plurality of users of the network.

3. The method of claim 1, wherein calculating a second back-off window based on at least one operational characteristic comprises calculating the back-off window based on collision rate in the network.

4. The method of claim 3, further comprising the step of estimating the collision rate based on a status of at least one reservation slot.

5. The method of claim 1, wherein the step of calculating the second back-off window based on at least one operational characteristic comprises calculating the back-off window to maintain a collision rate of approximately 1-2/e.

6. The method of claim 1, wherein the step of calculating the second back-off window based on at least one operational characteristic comprises calculating the back-off window to maintain a collision rate of approximately between .2 and .4.

7. The method of claim 1, further comprising dynamically calculating subsequent back-off windows to maintain a substantially constant collision rate and sending the subsequent back-off windows to more than one of the plurality of users of the network.

8. The method of claim 1, wherein the step of calculating the second back-off window based on at least one operational characteristic comprises calculating the back-off window based on a number of users on the network.

9. The method of claim 8, wherein the step of calculating the second back-off window based on at least one operational characteristic comprises calculating the back-off window to maintain the back-off window approximately equal to a number of users.

10. A method for resolving data collision in a shared network, the method comprising:

sending a common back-off window to a plurality of users of the network; and

recalculating and sending new back-off windows to at least some of the plurality of users to increase throughput of the network.

11. The method of claim 10, wherein the step of dynamically recalculating and sending new back-off windows comprises calculating the back-off windows to maintain a substantially constant collision rate.

12. The method of claim 11, further comprising the step of estimating the collision rate based on the status of at least one reservation slot.

13. The method of claim 10, wherein the step of dynamically recalculating and sending new back-off windows comprises calculating the back-off windows to maintain a substantially constant collision rate of 1-2/e.

14. The method of claim 10, wherein the step of dynamically recalculating and sending new back-off windows comprises calculating the back-off windows to maintain a substantially constant collision rate of approximately between .2 and .4.

15. The method of claim 10, wherein the step of dynamically recalculating and sending new back-off windows comprises calculating the back-off windows based on a number of users on the network.

16. The method of claim 10, wherein the step of dynamically recalculating and sending new back-off windows comprises calculating the back-off windows to maintain the back-off window approximately equal to a number of users.

17. A system for resolving data collisions in a shared network, comprising:

a plurality of remote devices; and

an access point in communication with the plurality of remote devices, wherein the access point further comprises:

a switch for communicating with the plurality of remote devices;

a transceiver for sending information to and receiving information from the plurality of remote devices; and

a collision resolution device that calculates an initial back-off window to be sent to the plurality of remote devices and dynamically adjusts a back-off window to substantially maintain a predetermined constant collision rate.

18. The system of claim 17, wherein the collision resolution device dynamically adjusts the back-off window to substantially maintain a constant collision rate of approximately 1-2/e.

19. The system of claim 17, wherein the collision resolution device estimates the collision rate of the network from a status of reservation slots.